

Special Article

Bioethics, neurosurgery, and integral healingAtul Goel, Sehdev Kumar¹

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The skills and expertise required for neurosurgery are awe-inspiring for people everywhere; who else but a neurosurgeon has the delicate and intricate skills to probe and heal the most vital part of human bodies, the center of our being, the very essence of our lives. As such no other profession wields such high admiration in the world.

Such highly specialized and intricate work also calls for the patients' — and of their friends and relatives — utmost trust in the neurosurgeons, and in their commitment to the highest standards of ethical practices.

It calls for a neurosurgeon's reaffirmation in the sanctity of life.

Above all, it calls for a neurosurgeon to do no harm and to resist all temptations that are driven by any impulse that is self-serving and is not in the best interest of the patient who has been entrusted to him.

Last year, in his best-selling book, *Do No Harm: Stories of Life, Death and Brain Surgery*, leading British neurosurgeon, Dr. Henry Marsh, tells us of the precariousness of some his surgical work in this supposed repository of soul, and with myriad capacities for memory, belief, speech, insights and dreams, but which is also mainly jelly and blood. Sometimes, Dr. Marsh confides, he was only 4 mms away from a catastrophe, even with micro-telescopes.

"The skull is a sealed box," he writes, "and there is only a limited amount of space in the head."^[1] Dr. Marsh tells us of the time he

conducted a spinal operation on a young mother who, despite everything proceeding uneventfully, woke out of anesthesia paralysed down the right side of her body. He writes that when you approach a patient you have damaged as a surgeon it feels "as though there is a force-field pushing against you, resisting your attempts to open the door behind which the patient is lying."^[1]

Why is it necessary for all neurosurgeons to remind themselves of this "force-field" pushing against them when they so obviously and manifestly inspire awe in others about their remarkable skills and achievements?

Because, now, far more than ever before, temptations to give new twists and turns to ethics-to bioethics specifically-are numerous, and the number of those who are voiceless, and uninformed, and are prone to be abused and used as mere Guiana pigs, is increasing, not only here in India but also worldwide. Because of new technology, new drugs, new surgical procedures, new hubris about the power of man over nature, and new centers of poverty and deprivation in far-flung places, there is sometimes a new sense in medical and biological sciences about what is possible to do, and therefore must be done.

The "lure of the technically sweet"-in the words of Robert J. Oppenheimer, the father of Atom Bomb, is far greater today than it was ever before.

Sadly, the history of such abuse and misuse of medical and biological sciences is long and troubling, and not only during the war periods in Nazi Germany or Imperial Japan but also during relatively peaceful periods, often for the glory and in the service of science.

Through much of the history of human civilization, those who were afflicted with mental disorders, have been the victims of horrendous religious obscurantism and priests, quacks and charlatans, and of social prejudices, and have possibly suffered more than those afflicted with any other diseases.

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In the name of science, for the advancement of medical knowledge, the disfranchised and the marginalized people of the society have been sacrificed more in numbers than possibly for all gory religious ritual practices throughout the ages.

Dr. J. Marion Sims, for instance, often referred to as “the father of gynecology,” performed surgical operations on enslaved African women throughout 1840s in America without anesthesia; most of these women died from infections because of these experiments. In order to test one of his theories about the causes of ophthalmia in infants, Dr. Sims performed experiments using a shoemaker’s awl to move around the skull bones of the babies of the enslaved women.^[3]

There is the case of an Irish servant woman in 1874 in the Good Samaritan Hospital in Cincinnati who had come to one Dr. Roberts Bartholow for the treatment of cancer. Sensing a research opportunity, the good doctor cut open her head and inserted needle electrodes into her exposed brain matter and published his findings in a research journal.^[4]

Twenty years later, in 1896, at the Children’s Hospital in Boston, Dr. Arthur Wentworth performed spinal taps on 29 young children to discover if doing so would be harmful. He did this without any knowledge of the children or the consent of their parents.^[5]

If we quote these examples from USA, it is not because the doctors and the scientists there have been less ethical than say in Russia or Japan or France or Britain or India. It is because, as an open questioning society, there are many journalists, researchers and social scientists in USA, possibly far more than anywhere else in the world, who investigate such cases vigorously and bring them to public light, and thus argue for higher bioethical standards, practices, policies, and laws. It is thus that the US has been the trailblazer in formulating bioethical principles and practices.^[6]

That is how the Tuskegee Syphilis experiment, the longest clinical study that went on for 40 years, from 1932 until 1972, conducted by the US Public Health Services at Tuskegee University in Alabama came to be revealed to the public, with all its racial and unethical implications. This experiment and research started during the Depression in 1930s, and was conducted on unsuspecting poor Afro-Americans, then called Negroes, for the study of syphilis, and how the disease would manifest itself, if untreated, especially by penicillin, which had been invented by then. Only a few of the 399 men survived the horrific experiment.^[7] When this experiment, the longest in the history of medical sciences and public health, was revealed by the journalists and researchers, it caused shock waves in the country. And it forced President Bill Clinton to express public apology on May 16, 1997. He said, in the presence of five survivors:

“The people who ran the study at Tuskegee diminished the stature of man by abandoning the most basic ethical precepts. They forgot their pledge to heal and repair. They had the power to heal the survivors and all the others and they did not. Today,

all we can do is apologize. . . . What was done cannot be undone. But we can end the silence. We can stop turning our heads away. We can look at you in the eye and finally say on behalf of the American people, what the United States government did was shameful, and I am sorry. . . . To our African American citizens, I am sorry that your federal government orchestrated a study so clearly racist.”

The appalling Tuskegee Syphilis experiment had some other important lessons to teach: Despite all their wanton abuse of power, in an open, liberal democracy, as USA is, no functionary of state, or a professional group, or a laboratory, or a pharmaceutical corporation can long hide from the probing eyes of the journalists, academics, public intellectuals, and other whistle-blowers.

It is thus that in October 2010, something even more abhorrent was revealed about syphilis experiments as penicillin was being discovered as its possible cure. This time the drama unfolded far away from the impoverished Macon County in Alabama to the impoverished country of Guatemala in Central America; it was brought to public light, quite coincidentally, more than 60 years later, by Professor Susan M. Reverby, an American historian, while she was examining papers on the Tuskegee study held at the University of Pittsburgh archives.

For 3 years, from 1946–1948, in an experiment sponsored by US Government, and led by Dr. John C. Cutler of US Public Health Services, American scientists infected some 1,500 Guatemalans with syphilis and gonorrhea, first in penitentiaries and army barracks, and later, as results seemed not quick enough, in mental health hospitals, by exposing the patients to infection by rubbing it on their genitalia, forearms, faces or through spinal injections.^[8] None of the infected men or women had any idea about the study, or had offered any kind of consent. They were given cigarettes as rewards. The purpose of the study was to determine how to prevent infection from syphilis, using different doses of penicillin, as well as to find effective treatments. The HHS fact sheet said: “Some of the persons infected with syphilis were prescribed only partial treatment or not treated at all.”

Once this gruesome story was revealed, there were public apologies yet once again: “Although these events occurred more than 64 years ago, we are outraged that such reprehensible research could have occurred under the guise of public health,” Secretary of State Hillary Clinton and Health and Human Services Secretary Kathleen Sebelius said in a joint statement on October 1, 2010. “We deeply regret that it happened, and we apologize to all the individuals who were affected by such abhorrent research practices.”^[8]

President Alvaro Colom of Guatemala Colom expressed his own outrage: “These should be considered crimes against humanity and Guatemala reserve the right to petition the relevant international court at an opportune time.”^[9]

Currently the case is before the courts in the US.

There is also the Milgram's experiment at Yale University conducted by psychologist Stanley Milgram about the nature and dynamics of the power of authority and obedience. The experiment itself traumatized the unsuspecting "teachers" who were asked, in the name of science, to administer high electric shocks to the "students" every time they failed.

Much worse was the so-called "Monster experiment" conducted at the University of Iowa in 1939 on unsuspecting orphan children in which, to study the possible cause of stuttering, stuttering was artificially, and permanently, induced in perfectly normal children. Many decades later, it led to a multi-million law suit against the university.^[10]

BRAIN, MIND, HEALING

For people all over the world, the brain is more than a mere vital organ of the body: Its well-being is essential to life; this is life. We are really dead when we are "brain dead." People everywhere are asking — and brain specialists and surgeons need to listen and answer — is brain the same thing as the mind?

We change our minds; can we change our brains? We learn about mindfulness; is there such thing as "brain-fulness"? And what it might be?^[11]

We talk of healthy body and healthy mind. How can we make our brains healthy? What are the features of a healthy brain? Nature has given us a brain; how can it be nurtured into a healthy brain? A more creative brain? A more peaceful brain? What foods can make our brain healthy? What thoughts, what music, what feelings are right for a healthy brain?

We have enlightened mind, and minds. How can we have enlightened brain? Enlightened brains?

Some neurosurgeons might say that these are questions to be answered by psychologists or psychiatrists, and not by brain surgeons. But we believe that some of these answers need to come from neurosurgeons as well. We believe that for good governance of our lives, rigid departmental bureaucratization of knowledge is not healthy; it is an inefficient way of being a specialist or a scientist. It creates problems for all of us. It creates a divided self, a self that is not fully engaged with the universe.

In the last 50 years, there has been an ongoing debate, even some exploration, in general public about the mind-body equation: About the nature of consciousness, about different states of consciousness, higher and more harmonious states of consciousness, sometimes induced by certain drugs, other times developed by music, dance, and meditation, and by certain spiritual practices.^[12] It is a profound hubris on the part of science, and of scientists, to believe and argue that all truth about life and nature, and about human presence in the universe, can be accessed and experienced only through science, and

through the methods of science. This is not to belittle science, and its achievements, or to invoke chauvinistic obscurantism as a path to knowledge, but an acknowledgement that there are many roads to truth, and what we regard truth to be.^[13]

So, how can brain surgeons encompass in their work the functioning of the brain at different levels of being? How can they comment on the roots of depravity, destruction and violence in the human behaviour in the brain itself?

How can the brain surgeons heal the brain, we ask. How can the brain be more creative, we wonder. More harmonious? More at peace with itself and the universe? Is all malady and healing in the brain or are they somewhere else as well?

We raise these questions on behalf of the *aam adami* — the ordinary people, for when you open the skull, isn't every brain ordinary and extraordinary at the same time? Don't these questions have far-reaching implications for our healthcare systems all over the world, and for the unfolding of the human destiny in the universe? Shouldn't the neurosurgeons wish to be engaged with them somewhat?^[14]

DEPRESSION

Increasingly we hear that there is an epidemic of depression in every country in the world. Mental health issues are becoming center-stage in healthcare. So, the question of relationship between mind and brain becomes crucial. If the brain is only, or essentially, a bio-chemical organ, and if depression is a state of the brain, perhaps it can be set right by biochemical processes. However, if the mind is distinct from the brain, what can be done to heal the mind in order for the depression to go away?

We state these issues so simply on purpose without reference to elaborate scientific and philosophical theories that have marked these discussions for decades, if not centuries, because none of these theories have lessened the depression. If anything, depression — sadness, low levels of energy and zest for life, anxiety, and fear — both imagined and real, incapacity to love and to be loved, lack of happiness — however broadly defined, are being reported more and more from every corner of the world, despite marked rise in our material well-being, and great scientific progress.^[15] Two years ago, here in India all newspapers carried headlines: 35% of all Indians are depressed. Many people did not know that they were depressed, and now they were depressed.

Thirty-five percent Indians is a very large number in a population of 1.2 billion; that is about 420 million people. Can you imagine if 420 million people were seeking medical help for depression and being prescribed anti-depressant pills, how happy and rich the doctors be, and how gluttonous the pharmaceutical companies be?

In fact, it turned out that the news of 35% of Indians being depressed was manufactured by the pharmaceutical companies. Sickness was being defined and manufactured in ways that had nothing to do with health, and had all to do with avarice and

exploitation. Should our life and our well-being be hi-jacked by pharmaceutical companies and their handmaidens?

Shouldn't people who study sick and healthy brains be telling us something about it?

It has huge implications for health budget and policies of every country. It has enormous implications for older people, many of whom are said to be more depressed than other segments of society. It also has vital significance for physician-assisted end of life decisions, euthanasia, that are being argued all over the world, in public and in courts, including in India.

BIOETHICS

To talk of ethics, of bioethics, in such a state of affairs, may sound too many thoroughly unpractical and far-fetched. Yet we wish to submit that ethics is at the very heart of life, of civilized life specifically. Even when we breach ethics — and we breach it far more often than we observe — we still yearn for a moral compass. Whether guided by our conscience, or by our religious or cultural codes, or by our laws, or by fear of punishment, or of hell, over millennia, we have developed a certain innate sense of right and wrong; it has been called “The Moral Instinct.”^[16]

A hankering for ethical conduct, it seems, is bred in human bones. It is part of our nature; it is one of the surest traits that define our humanity.

Thus, extraordinary achievements in medical sciences and technology in the past few decades have been accompanied by equally extraordinary societal changes. New sense of freedom of men and women-despite continuing gross disparities-marks our age.

Indeed it could be said, with both hope and some trepidation, that with 7 billion people on the planet, we have now at least as many degrees of freedom, 7,000 million of them, this despite fierce forces producing mindless conformity. In each of the 7,000 million brains on earth, there are infinite worlds of thought, action, intentions, and dreams.

“Are all these worlds some biochemical phantoms?” one may ask. There are now new evolving principles of bioethics, of how all humans, and all life is to be treated in hospitals, research laboratories, and operating theaters. They represent a new liberal ethos of human presence in society. One can say there is a paradigm shift in the way we are required to, and must, do science today.

Bioethics, like all ethical concerns, is not only a matter of professional do's and don'ts; it is, at the heart of it, profoundly personal. When individuals do not choose to live a life of integrity, no professional ethics can persevere, and no arm of law can be long enough to reach all wrong doers. Though it has never been recognized as such, the biggest bioethical issue, in our view, is how to engage our magnificent intellectual, scientific, and technological resources not in the service of death but in the service of life, in all its diverse and magnificent fecundity.

How can the physicians, surgeons, and biological scientists be engaged in healing the earth itself? A hundred years ago, in 1914, the First World War started. It saw for the first time bombings from the air, death and mayhem in trenches, the use of chemical gases, the employment of tanks and barbed wire, and people of a small continent, belonging to the same religion and the same race, furiously fighting against each other and taking the rest of the world to hell with them. This war was meant to end all wars. More than 18 million people died; many more millions were injured, maimed, and shell-shocked. In the end, as one wounded soldier wrote home, no side won except the War itself. Twenty years later, in 1939, another war started, killing millions more with new weapons of mass destruction.

Every country-however poor or wealthy, however big or small-spends enormous portions of its precious natural and intellectual resources on the so-called defence, for maintaining huge standing armies, for manufacturing, selling, or buying more and more sophisticated weapons of destruction, for killing a phantom enemy under water, in the air, and on the ground. In the face of our enormous ecological, educational, cultural, and health needs for the living, and for future generations, such destructive ways of using our precious resources are primitive and barbaric; in the words of Dr. Martin Luther King, “Our scientific power has outrun our spiritual power. We have guided missiles and misguided men.”

We fervently believe that all our bioethical concerns are flimsy unless we dedicate ourselves to the abolition of war-and its deadly machines and beastly destruction-as a way of resolving our conflicts. For Bioethics to emerge as a powerful cultural tool for new values and freedoms, it must celebrate life and peace in all their glorious myriad ways. Can physicians and surgeons, engaged in healing the sick and the infirm, use their enormous trust and goodwill among people to promoting peace among humans and nations, and to healing the sick and the dying planet, the Mother Earth? Can you render your prestige and your important voice as “Surgeons & Neurosurgeons for Peace,” as true healers?

On behalf of all of us-frail and ordinary human beings — we urge you, and invite you to this great bioethical enterprise!

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